

MICROSCOPE PROBLEMS

Most measurements are given in **micrometres**, and not millimetres, since we are working with very small organisms (using micrometres minimizes the use of decimals). Therefore, we need to know how to change millimetres (mm) to micrometres (μm).

Micro means one millionth $\Rightarrow 1,000,000 \mu\text{m} = 1 \text{ m}$

For microscope purposes, the following relationship is more important: **$1000 \mu\text{m} = 1 \text{ mm}$**

Remember:

$1 \text{ mm} = 0.001 \text{ m}$	$1000 \text{ mm} = 1 \text{ m}$
$1 \text{ cm} = 0.01 \text{ m}$	$1 \text{ m} = 100 \text{ cm}$
$1 \text{ mm} = 0.1 \text{ cm}$	$1 \text{ cm} = 10 \text{ mm}$

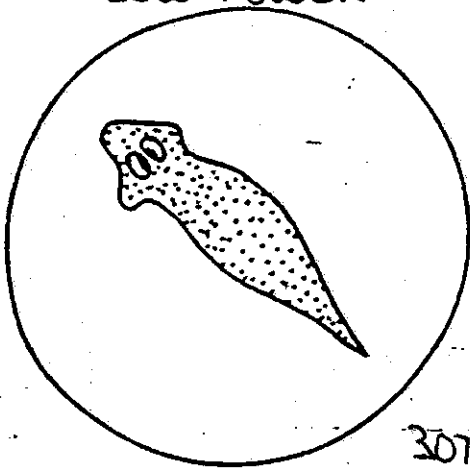
Change the following units as indicated:

- a. $3000 \mu\text{m}$ 3.0 mm
- b. $100 \mu\text{m}$ 0.1 mm
- c. $250 \mu\text{m}$ 0.25 mm
- d. $10 \mu\text{m}$ 0.01 mm
- e. 2.5 mm 2500 μm
- f. 25 mm 25,000 μm
- g. 0.75 mm 750 μm
- h. 0.03 mm 30 μm
- i. 1.0 cm 10 mm = 10,000 μm
- j. 2.65 cm 26.5 mm = 26,500 μm

Low = 4000 μm
 Medium = 1600 μm
 High = 400 μm

Calculate the size of the following organisms in μm .

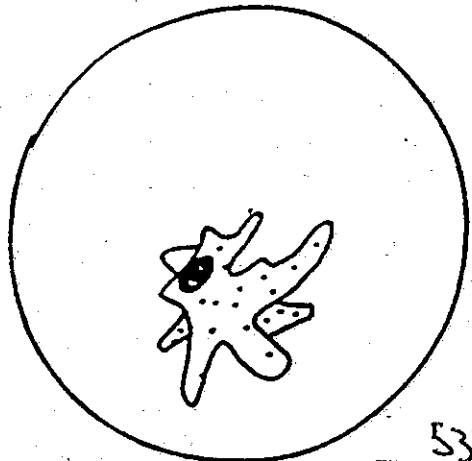
Low POWER



$$4000 \mu\text{m} \div 1.3 = 3077 \mu\text{m}$$

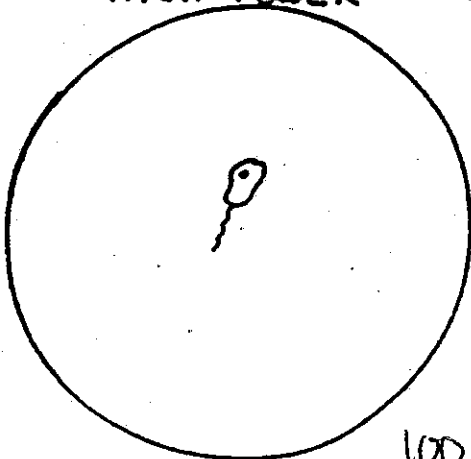
$$3077 \mu\text{m}$$

MEDIUM POWER



$$1600 \mu\text{m} \div 3 = 533 \mu\text{m}$$

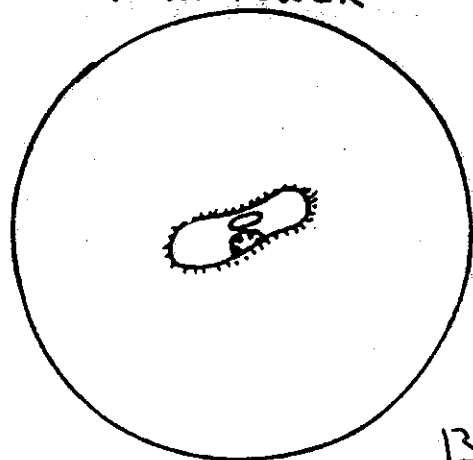
HIGH POWER



$$400 \mu\text{m} \div 4 = 100 \mu\text{m}$$

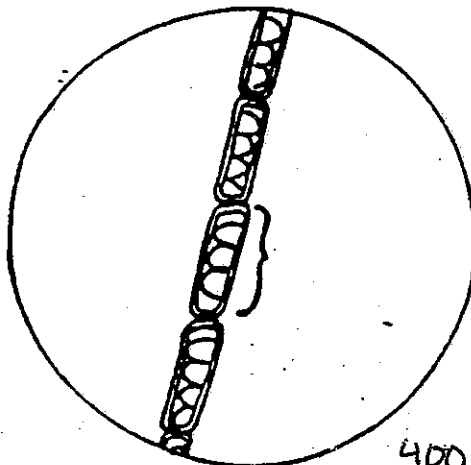
MEDIUM POWER

HIGH POWER

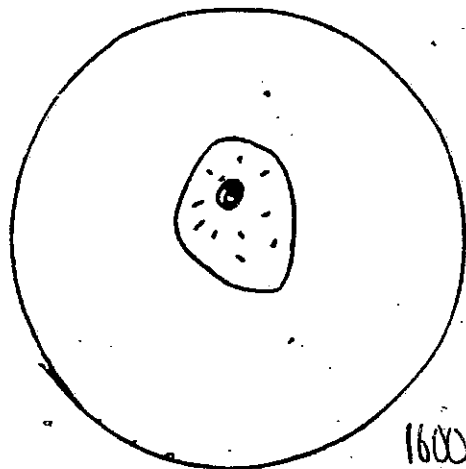


$$400 \mu\text{m} \div 3 = 133 \mu\text{m}$$

LOW POWER



$$1600 \mu\text{m} \div 4 = 400 \mu\text{m}$$



$$4000 \mu\text{m} \div 2.5 = 1600 \mu\text{m}$$